
摘要

目前全球科技得到快速的发展，公众对于安全装置方面的要求日益提升。因此研发了电子锁，旨在满足社会公众日益多元化与个性化的需求，为公众提供方便且增强安全的性能；电子锁的优势包括具有安全的性能及低廉的成本，同时能够降低功耗且容易进行操作，无需携带金属钥匙只需记忆密码便能够实现开锁功能，非常适合现代人的生活需求，比如，在大型超市可以用电子锁作为储物箱的防盗装置，人们去超市购物时可以将随身携带的物品放在储物柜中；在学生寝室、办公室、家庭，都可以应用此电子锁作为其保险装置。现阶段电子锁是以微电脑技术为基础、单片机为主体的科学化装置，它的编码与解码均采取程序的形式进行生成，单片机发展到现在，已经有很多的类型，比如最简单最常用的51系列单片机，它有非常丰富的I/O接口，可以实现较复杂的功能，并且，极为的安全与可靠，可以满足较多人的需求。此课题的主要内容是基于单片机自动存包柜的设计与仿真，自动化的存包柜是创新产品，拥有强大的实用性和自动化功能，操作起来简单而便捷，同时具备极强的安全可靠性能，可为各种场景的群众提供优质的服务，用户以简明扼要的操作说明书即可实现柜门开启与关闭方面的操作。此系统中的STC89C51在控制管理系统及相关技术中发挥核心性作用，系统整体包括主控环节与LCD1602液晶显示部分，通过产生随机的密码与进行核对的操作实现用户存取包的过程。此设计的各部件安装极大地方便了用户的存取包过程，操作起来快速而简单。

关键词： STC89C51；LCD1602；随机密码

Abstract

With the rapid development of global science and technology, the public's requirements for safety devices are increasing. Therefore, the electronic lock is developed to meet the increasingly diversified and personalized needs of the public and provide convenience and enhanced security performance for the public. The advantages of electronic lock include the safety performance and low cost, and it can reduce power consumption and easy operation. It can realize the unlocking function without carrying metal key and just memorizing password, which is very suitable for modern people's life needs, for example, in large supermarkets, electronic locks can be used as anti-theft devices for storage boxes. When people go shopping in supermarkets, they can put their belongings in the lockers. In students' dormitories, offices and families, they can use the electronic locks as their safety devices. At present, electronic lock is a scientific device based on micro-computer technology and single-chip microcomputer as the main body. Its coding and decoding are generated in the form of program. With the development of single-chip microcomputer, there are many types, such as the simplest and most commonly used 51 series single-chip microcomputer, which has a very rich I / O interface, can achieve more complex functions, and is extremely safe and available. It can meet the needs of many people. The main content of this subject is based on the design and Simulation of the single-chip microcomputer automatic storage cabinet. The automatic storage cabinet is an innovative product, with strong practicability and automation functions, simple and convenient operation, and strong safety and reliability, which can provide high-quality services for the crowd in various scenarios. The user can open the cabinet door with simple and concise operation instructions. Close aspect operations. STC89C51 in this system plays a key role in the control management system and related technologies. The whole system includes the main control part and LCD1602 liquid crystal display part. The process of user access package is realized by generating random password and checking operation. The installation of each part of this design greatly facilitates the user's access to the package process, and the operation is fast and simple.

Key words: STC89C51; LCD1602; Random password

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